

SEQUENCE LISTING

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 <120> NEW ENZYME AND ITS USE
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 <150> US 60/320,139
 <151> 2003-04-24
 <150> US 60/481,598
 <151> 2003-11-05
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 Val Asp Thr Pro Asn Leu Asp Ala Met Ala Arg Asp Gly Val Lys Ala
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 Arg Tyr Met Thr Pro Ala Phe Val Thr Met Thr Ser Pro Cys His Phe
 65 70 75 80
 Thr Leu Val Thr Gly Lys Tyr Ile Glu Asn His Gly Val Val His Asn
 85 90 95
 Met Tyr Tyr Asn Thr Thr Ser Lys Val Lys Leu Pro Tyr His Ala Thr
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 Leu Gly Ile Gln Arg Trp Trp Asp Asn Gly Ser Val Pro Ile Trp Ile
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 Thr Ala Gln Arg Gln Gly Leu Arg Ala Gly Ser Phe Phe Tyr Pro Gly



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Ile	Glu	Phe	Glu	Leu	Leu	Asp	Tyr	Gly	Pro	Asn	Gly	Met	Leu	Leu	Pro				
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Gly	Tyr	Val	Ile	His	Gly	Arg	Ile	Asn	Val	Gln	Phe	Asn	Asn	Gly	Glu				
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Val	Gly	Pro	Ser	Phe	Arg	Ala	Gly	Leu	Glu	Val	Glu	Pro	Phe	Glu	Ser				
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Val His Val Tyr Glu Leu Met Cys Arg Leu Leu Gly Ile Val Pro Glu
 385 390 395 400

Ala Asn Asp Gly His Leu Ala Thr Leu Leu Pro Met Leu His Thr Glu
 405 410 415

Ser Ala Leu Pro Pro Asp Ala Leu Leu Val Ala Asp Gly Pro Cys Leu
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Pro Ser Leu Ser Gln Ala Lys Gly Cys Met Pro Leu Ser Pro Ala Ala
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Leu	Leu	Leu	Val	Ser	Phe	Asp	Gly	Phe	Arg	Trp	Asn	Tyr	Asp	Gln	Asp
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Val	Asp	Thr	Pro	Asn	Leu	Asp	Ala	Met	Ala	Arg	Asp	Gly	Val	Lys	Ala
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Arg	Tyr	Met	Thr	Pro	Ala	Phe	Val	Thr	Met	Thr	Ser	Pro	Cys	His	Phe
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Thr	Leu	Val	Thr	Gly	Lys	Tyr	Ile	Glu	Asn	His	Gly	Val	Val	His	Asn
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Gly Ile Ala His Asn Tyr Lys Asn Glu Thr Glu Trp Arg Ala Asn Ile
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Asp Thr Val Met Ala Trp Phe Thr Glu Glu Asp Leu Asp Leu Val Thr
 180 185 190

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Ser Pro Glu Arg Arg Glu Met Val Arg Gln Val Asp Arg Thr Val Gly
 210 215 220

Tyr Leu Arg Glu Ser Ile Ala Arg Asn His Leu Thr Asp Arg Leu Asn
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Leu Ile Ile Thr Ser Asp His Gly Met Thr Thr Val Asp Lys Arg Ala
 245 250 255

Gly Asp Leu Val Glu Phe His Lys Phe Pro Asn Phe Thr Phe Arg Asp
 260 265 270

Ile Glu Phe Glu Leu Leu Asp Tyr Gly Pro Asn Gly Met Leu Leu Pro
 275 280 285

Lys Glu Gly Arg Leu Glu Lys Val Tyr Asp Ala Leu Lys Asp Ala His
 290 295 300

Pro Lys Leu His Val Tyr Lys Lys Glu Ala Phe Pro Glu Ala Phe His
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Tyr Ala Asn Asn Pro Arg Val Thr Pro Leu Leu Met Tyr Ser Asp Leu
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His Gly Phe Asp Asn Lys Asp Met Asp Met Lys Thr Ile Phe Arg Ala
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Val Gly Pro Ser Phe Arg Ala Gly Leu Glu Val Glu Pro Phe Glu Ser
 370 375 380

Val His Val Tyr Glu Leu Met Cys Arg Leu Leu Gly Ile Val Pro Glu

385 390 395 400
 Ala Asn Asp Gly His Leu Ala Thr Leu Leu Pro Met Leu His Thr Glu
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 Ser Ala Leu Pro Pro Asp Gly Arg Pro Thr Leu Leu Pro Lys Gly Arg
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35 40 45

Val Asp Thr Pro Asn Leu Asp Ala Met Ala Arg Asp Gly Val Lys Ala
50 55 60

Arg Tyr Met Thr Pro Ala Phe Val Thr Met Thr Ser Pro Cys His Phe
65 70 75 80

Thr Leu Val Thr Gly Lys Tyr Ile Glu Asn His Gly Val Val His Asn
85 90 95

Met Tyr Tyr Asn Thr Thr Ser Lys Val Lys Leu Pro Tyr His Ala Thr
100 105 110

Leu Gly Ile Gln Arg Trp Trp Asp Asn Gly Ser Val Pro Ile Trp Ile
115 120 125

Thr Ala Gln Arg Gln Gly Leu Arg Ala Gly Ser Phe Phe Tyr Pro Gly
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Gly Asn Val Thr Tyr Gln Gly Val Ala Val Thr Arg Ser Arg Lys Glu
145 150 155 160

Gly Ile Ala His Asn Tyr Lys Asn Glu Thr Glu Trp Arg Ala Asn Ile

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Leu	Tyr	Phe	Gly	Glu	Pro	Asp	Ser	Thr	Gly	His	Arg	Tyr	Gly	Pro	Glu
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Ser	Pro	Glu	Arg	Arg	Glu	Met	Val	Arg	Gln	Val	Asp	Arg	Thr	Val	Gly
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Tyr	Leu	Arg	Glu	Ser	Ile	Ala	Arg	Asn	His	Leu	Thr	Asp	Arg	Leu	Asn
225					230					235					240
Leu	Ile	Ile	Thr	Ser	Asp	His	Gly	Met	Thr	Thr	Val	Asp	Lys	Arg	Ala
				245					250					255	
Gly	Asp	Leu	Val	Glu	Phe	His	Lys	Phe	Pro	Asn	Phe	Thr	Phe	Arg	Asp
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Ile	Glu	Phe	Glu	Leu	Leu	Asp	Tyr	Gly	Pro	Asn	Gly	Met	Leu	Leu	Pro
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Lys	Glu	Gly	Arg	Leu	Glu	Lys	Val	Tyr	Asp	Ala	Leu	Lys	Asp	Ala	His
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Tyr	Ala	Asn	Asn	Pro	Arg	Val	Thr	Pro	Leu	Leu	Met	Tyr	Ser	Asp	Leu
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Gly	Tyr	Val	Ile	His	Gly	Arg	Ile	Asn	Val	Gln	Phe	Asn	Asn	Gly	Glu
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His	Gly	Phe	Asp	Asn	Lys	Asp	Met	Asp	Met	Lys	Thr	Ile	Phe	Arg	Ala
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Val	His	Val	Tyr	Glu	Leu	Met	Cys	Arg	Leu	Leu	Gly	Ile	Val	Pro	Glu
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